

REMARKS

Claims 1-22 are pending. Applicant has amended claims 1, 11, 21 and 22 and introduced new claims 23-24. Thus, upon entry of this amendment, claims 1-24 will be pending. This amendment raises no issue of new matter. Support for new claim 23 can be found *inter alia* in the specification on pages 29-31. Support for new claim 24 can be found in Figure 20 and on page 41. In addition, support for "non-stochastic" may be found *inter alia* in the specification beginning at page 324, line 4.

Rejection Under 35 U.S.C. § 112, second paragraph

The Examiner rejected claims 1-22 as being indefinite in the recitation of "improved organism having a desirable trait" since the improvement nor desirable trait is defined in the claim.

In reply, applicants traverse the rejection and asserts that the "improvement" and the "desirable trait" need not be specified in the claim in order to have the claim itself be definite. The subject application defines "trait" as any detectable parameter associated with an organism under a set of conditions. There are numerous examples of "detectable parameters" which are set out in the subject specification which include: the ability to produce a substance, the ability to not produce a substance, an altered pattern of (such as an increase or a decrease) ability to produce a substance, viability under certain conditions, non-viability under certain conditions, behavior, growth rate, size,

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morphology, or an alteration in a morphological characteristic. See pages 29-31. In addition, Table 2 (starting on page 21) provides non-limiting examples of genes or gene products, in-put traits and out-put traits of the claimed method. Table 2 also provides non-limiting examples of traits/phenotypes with agronomic properties, with product quality properties, with herbicide tolerance properties, and with pest resistance properties.


Applicant reiterates that these are only examples of such traits. The improvement or desirable trait need not be defined in the claim in order for the claim to meet the requirements of 35 U.S.C. § 112, second paragraph.

Conclusion

Applicant hereby authorizes deduction of \$ 18.00 for claims fees due upon entry of this Amendment from Deposit Account No. 08-0219. If any additional fees are required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 08-0219.

Respectfully submitted,

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Exhibit A – Annotated Version of Claim Amendments

1. (AMENDED) A method of producing an improved organism having a desirable trait, the method comprising:

- a) obtaining an initial population of organisms,
- b) generating a set of mutagenized organisms, from the initial population, wherein non-stochastic genetic mutations are represented in the set of mutagenized organisms, [such that when all the genetic mutations in the set of mutagenized organisms are taken as a whole, there is represented a set of substantial genetic mutations,] and
- c) [detecting the presence of said] identifying the desirable trait exhibited by one of the set of mutagenized organisms, thereby producing the improved organism.

11. (AMENDED) A method of producing an improved organism having a desirable trait, the method comprising:

- a) obtaining an initial population of organisms,
- b) generating a set of mutagenized organisms from the initial population, each having at least one genetic mutation, wherein non-stochastic genetic mutations are represented in the set of mutagenized organisms [such that when all the genetic mutations in the set of mutagenized organisms are taken as a whole, there is represented a set of substantial genetic mutations]

c) detecting the manifestation of at least two genetic mutations which contribute to the desired trait,

d) introducing the at least two detected genetic mutations into one organism,
and

e) optionally repeating any of the steps, thereby producing an improved organism having a desirable trait [a), b), c), and d)].

21. (AMENDED) A method for identifying a gene that alters a trait of
an organism, the method comprising:

a) obtaining an initial population of organisms,

b) generating a set of mutagenized organisms from the initial population of organisms, wherein non-stochastic genetic mutations are represented in the set of mutagenized organisms [such that when all the genetic mutations in the set of mutagenized organisms are taken as a whole, there is represented a set of substantial genetic mutations,] and

c) identifying a mutagenized organisms exhibiting the altered trait [detecting the presence an organism having said altered trait], and

d) determining the nucleotide sequence of a gene having the genetic mutation [a gene that has been mutagenized] in the organism identified in step (c), thereby identifying the gene that alters the trait of the organism [having the altered trait].

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22. (AMENDED) A method for producing an organism with an improved trait, the method comprising:

- a) functionally knocking out an enogenous gene in a substantially clonal population of organisms;
- b) transferring a library of altered genes into the substantially clonal population of organisms, wherein each altered gene differs from the endogenous gene at only one codon to produce a popoulation of mutagenized organisms;
- c) detecting a mutagenized organism having an improved trait, thereby producing an organism with an improved trait. [; and
- d) determining the nucleotide sequence of an gene that has been transferred into the detected organism.]